



CALS TEST NETWORK

AFCTN Test Report 94-021

AFCTB-ID
93-054



Technical Publication Transfer

Using:



Northrop Corporation's Data



MIL-D-28000A (IGES)
MIL-M-28001A (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

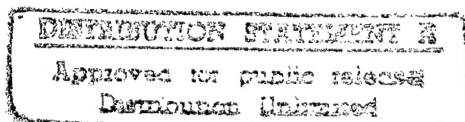


Quick Short Test Report



02 June 1993

19960822 164



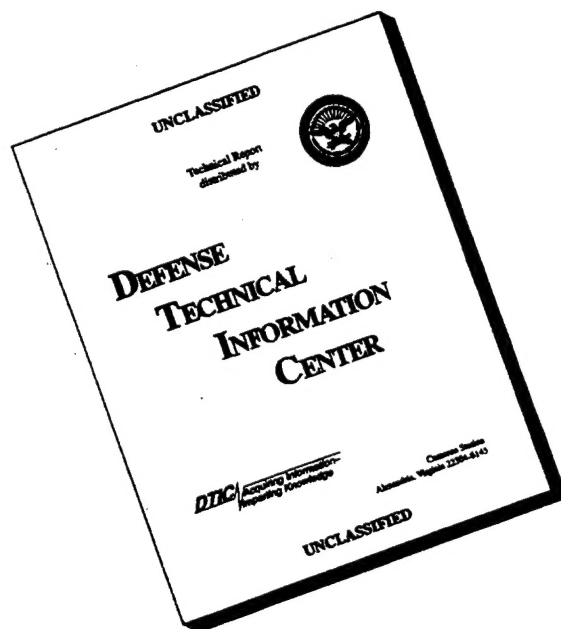
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Quick Short Test Report

02 June 1993

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1. FOREC CALS Test Network

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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALs) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Northrop Corporation's interpretation and use of the CALS standards, in transferring technical publication data. Northrop used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 93-054

Date of
Evaluation: 02 June 1993

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data
Originator: John P. Kent
Northrop Corporation
MS L591/UB
8900 East Washington Blvd
Pico Rivera CA 90660
(310) 942-3030

Data
Description: Technical Manual Test
2 Document Declaration file
2 Document Type Definition (DTD)
1 Initial Graphics Exchange Standard
(IGES) file
2 Text/Standard Generalized Markup Language
(SGML) files
1 Raster file
1 Computer Graphics Metafile (CGM) file

Data
Source System: 1840

HARDWARE

Unknown

SOFTWARE

Unknown

IGES

HARDWARE

Unknown

SOFTWARE

Unknown

Text/SGML

HARDWARE

Unknown

SOFTWARE

Unknown

Raster

HARDWARE

Unknown

SOFTWARE

Unknown

CGM

HARDWARE

Unknown

SOFTWARE

Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.8 UNIX

XSoft CAPS/CALS v40.4

Texas Instruments (TI) Tapetool v1.0.1

PC 486/50

AFCTN Tapetool v1.2.9 DOS

MIL-D-28000 (IGES)

Sun SparcStation 2

ArborText iges2draw

Carberry CADLeaf Plus v3.1

IGES Data Analysis (IDA) Parser/Verifier v92

IDA IGESView v3.05

Rosetta Technologies Preview v3.2

PC 486/50

AUTODESK AutoCAD 386 R12

Cadkey Cadkey v5.02

IDA IGESView Windows

MIL-M-28001 (SGML)

PC 486/50

Exoterica *XGMLNormalizer v1.2e3.2*
Exoterica *Validator v2.0 EXL*
McAfee & McAdam *Sema Mark-it v2.3*
Public Domain *sgmls*

MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText *g42tiff*
Carberry *CADLeaf Plus v3.1*
AFCTN *validg4*
AFCTN *calstb.475*
IDA *IGESView v3.0*
Island Graphics *IslandPaint v3.0*

PC 486/50

IDA *IGESView Windows*
Inset Systems *HiJaak v2.1*
Inset Systems *HiJaak Window v1.0*
Corel Ventura *Publisher*

MIL-D-28003 (CGM)

SUN SparcStation 2

ArborText *cgm2draw*
Island Graphics *IslandDraw v3.0*
Carberry *CADLeaf Plus v3.1*

PC 486/50

Software Publishing Corporation
(SPC) *Harvard Graphics v3.05*
Inset Systems *HiJaak v2.1*
Inset Systems *HiJaak v1.0 Windows*
Micrografx *Designer v3.1*
Corel Ventura *Publisher*

Standards

Tested:

MIL-STD-1840A
MIL-D-28000A
MIL-M-28001A
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the required label indicating the recording density as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files that were recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool* v1.2.9 utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's *CAPS Read1840A* utility without any reported errors.

The tape was read using the TI's *Tapetool* v1.0.1 without a reported error.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers.

The physical structure meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

The tape contained one IGES file. This file was evaluated using IDA's *parser* and *verifier* set for CALS Class I. No errors were reported during this procedure.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *iges2draw* utility with no reported errors. The resulting file was read into Island Graphics' *IslandDraw* and displayed. It was noted that the file was off the screen to the left. The IGES file was found located at a negative x value. Using a switch, it was possible to display the complete image.

The file was read using AUTODESK's *AutoCAD R12* with translator version 5.1 without a reported error.

The file was converted using Cadkey's *ig2c* utility. The resulting file was read into Cadkey's *Cadkey* and displayed with no noted problems.

The file was read into Carberry's *CADLeaf* software without a reported error. When displayed the image was partially off screen to the left. The displayed image was the same as seen using ArborText's *iges2draw* utility.

The file was read using IDA's *IGESView* and *IGESView for Windows* without a reported error.

The file meets the CALS MIL-D-28000A specification, but the negative value required the use of a switch in a publishing system application.

5. SGML Analysis

The tape contained two DTDs and two Text files.

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

The first document set had a unique DTD and Text file. When these files were parsed, many errors were generated. See the Appendix to this report for those errors.

The second document contained a more standard DTD and Text file.

The Text and DTD files from this document were evaluated using Exoterica's *Validator V2.0 EXL* parser with no errors being reported.

The Text and DTD files from this document were tested using Exoterica's *XGMLNormalizer* parser with no errors being reported.

The Text and DTD files from the tape were evaluated using McAfee & McAdam's *Sema Mark-it* parser with no errors being reported.

The Text and DTD files from the tape were evaluated using the Public Domain *sgmls* parser with no errors being reported.

Because of the number and type of errors reported by the parser on the first document set, the files do not meet the CALS MIL-D-28001A specification.

6. Raster Analysis

The tape contained one Raster file. This file was evaluated using the AFCTN *validg4* utility. This program reported that the file meets the CALS MIL-R-28002A specification.

The file was read into the AFCTN *calstb.475* viewing utility. No problems were noted although a slight angle was noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *g42tiff* utility without a reported error. The resulting file was read into Island Graphics' *IslandPaint* and displayed.

The Raster file was read into Carberry's *CADLeaf* software without a reported error. The image was displayed without a problem.

The file was read into IDA's *IGESView* and *IGESView for Windows* and displayed without a reported error.

The file was read into Inset Systems' *HiJaak for Windows* without a reported error.

The file was converted using Inset Systems' *HiJaak for DOS* into an IMG format without a reported error. The resulting file was read into Corel's *Ventura Publisher*, displayed and printed.

The Raster file was converted using Rosetta Technologies' *Prepare* without a reported error. The resulting file was read into Rosetta Technologies' *Preview*, displayed and printed.

The Raster file meets the CALS MIL-R-28002A specification.

7. CGM Analysis

The tape contained one CGM file. The file was evaluated using a software available within the AFCTB with CALS options. This utility reported that the file meets the CALS MIL-D28003 specification.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The CGM file was converted using ArborText's *cgm2draw* utility without a reported error. The resulting file was read into Island Graphics' *IslandDraw* and displayed. This utility removed the color from the file. Some text overflow was noted.

The file was viewed using a software available within the AFCTB. The image was displayed but errors in the text font were noted and this was reported as an error.

The file was read into Carberry's *CADLeaf* software. The file displayed with some text overflow along the bottom of the boxes. The image displayed in color.

An attempt to read the file into Inset Systems' *HiJaak for Windows* resulted in a error being reported and nothing being displayed.

The file was imported directly into Island Graphics' *IslandDraw* without a reported error. The image was displayed in color. The text, in the restricted text block, overflowed the defined area. The elliptical arc in block 18 was not complete.

An attempt to imported the file into the Micrografx *Designer* did not generate an error but nothing was displayed.

According to Michael Harrison of Micrografx, "Micrografx is aware of the problems associated with reading these files and is working on a solution to be implemented in a future release fo our products."

The file was imported into SPC's *Harvard Graphics* v3.05 with many reported errors. The resulting file was not usable.

The file was imported into Corel's *Ventura Publisher* with a reported error of a bad file type.

The CGM file was reported as meeting the CALS MIL-D-28003 specification, but it only displayed correctly on one software package available in the AFCTB.

8. Conclusions and Recommendations

The physical format for the tape was correct. No errors were reported from any of the tape utilities available in the AFCTB. The physical tape structure meets the CALS MIL-STD-1840A requirements.

The IGES file meets the CALS MIL-D-28000A specification, but the negative X value required the use of switch in some translators.

The tape contained two documents. The first document had reported errors from all available parsers in the AFCTB. The second document set had no reported errors. The SGML part of the tape does not meet the CALS MIL-M-28001A specification.

The Raster file meets the CALS MIL-R-28002A specification.

The CGM file meets the CALS MIL-D-28003 specification, but only one of eight software utilities displayed the file near correct.

Because of the errors in the SGML part of document one, the tape does not meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

Air Forec CALS Test Network Catalog Evaluation - Version 1.2; Release 9 (O)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Jun 1 13:44:10 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u129/Set008

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D002	Document Declaration	D/00260	02048/000001	Extracted
D001T001	Text	D/00260	02048/000001	Extracted
D001G002	DTD	D/00260	02048/000003	Extracted
D001H003	Output Specification	D/00260	02048/000016	Extracted
D002T001	Text	D/00260	02048/000002	Extracted
D002C002	CGM	F/00080	00800/000006	Extracted
D002R003	Raster	F/00128	02048/000017	Extracted
D002Q004	IGES	F/00080	02000/000012	Extracted
D002G005	DTD	D/00260	02048/000010	Extracted
D002H006	Output Specification	D/00260	02048/000061	Extracted

Catalog Process terminated normally.

9.2 Tape Evaluation Log

Air Forec CALS Test Network Tape Evaluation - Version 1.2; Release 9 (0)

Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Jun 1 13:43:55 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ITDS01

CONTROLLER

4

Label Identifier: VOL1
Volume Identifier: ITDS01
Volume Accessibility:
Owner Identifier:
Label Standard Version: 4

HDR1D001

ITDS0100010001000100 93133 93133 000000 CONTROLLER

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: ITDS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0001
Generation Version Number: 00
Creation Date: 93133
Expiration Date: 93133
File Accessibility:
Block Count: 000000
Implementation Identifier: CONTROLLER

HDR2D0204800260

00

Label Identifier: HDR2
Recording Format: D
Block Length: 02048
Record Length: 00260
Offset Length: 00

***** Tape Mark *****

AFCTN Test Report
94-021

AFCTB Test Report
93-054

End of Volume ITDS01

End Of Tape File Set

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

9.3 Tape File Set Validation Log

Air Forec CALS Test Network File Set Evaluation - Version 1.2; Release 9 (0)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Tue Jun 1 13:44:10 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set008

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: John P. Kent, Northrop Corporation, B-2 Division, L591/GK, 8900 E. Washington
Pico Rivera, CA 90660-3783 (310) 948-0624

srcdocid: STPRO25.2.4

srcrelid: NONE

chglvl: ORIGINAL

dteis: 19930513

dstsys: Jeff Fisher, Integration Manager, AF CALS Test Bed, HQ AFMC (I)/ENCT, 4027 Col
Highway, Dayton, OH 45431-1601

dstdocid: STPRO25.2.4

dstrelid: NONE

dtetrn: 19930513

dlvacc: NONE

filcnt: T1, H1, G1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: ERROR REPORT

docttl: Test of error reports

<<<<< PART OF LOG REMOVED HERE >>>>>

Evaluating numbering scheme...

No errors were encountered during numbering scheme evaluation.

Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification.

File Count verification complete.

No errors were encountered in Document D001.

Found file: D002

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: John P. Kent, Northrop Corporation, B-2 Division, L591/GK, 8900 E. Washington
Pico Rivera, CA 90660-3783 (310) 948-0624

srcdocid: STPRO25.2.5

srcrelid: NONE

chglvl: ORIGINAL

dteis: 19930513

dstsys: Jeff Fisher, Integration Manager, AF CALS Test Bed, HQ AFMC (I)/ENCT, 4027 Col
Highway, Dayton, OH 45431-1601

dstdocid: STPRO25.2.5

dstrelid: NONE

dtetrn: 19930513

dlvacc: NONE

filcnt: T1, H1, G1, C1, Q1, R1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: DIRECTIVE

docttl: Test of local directives

<<<< PART OF LOG FILE REMOVED HERE >>>>

Evaluating numbering scheme...

No errors were encountered during numbering scheme evaluation.

Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification.

File Count verification complete.

No errors were encountered in Document D002.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

10. Appendix B - Detailed IGES Analysis

10.1 File D002Q004

10.1.1 Parser/Verifier Log

```
*** IGES DATA FILE ANALYSIS ***
***      MARCH 1992      ***
***   IGES Data Analysis   ***
***      (708) 449-3430      ***
```

Input file is /novell/9354/q204.igs
Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)
Today is June 1, 1993 3:45 PM

*** File and Product Name Information ***

```
File name from sender      = 'Q004.iges'
File creation Date.Time    = '930513.162523'
Model change Date.Time     = ''
Author                     = 'tom'
Department                 = 'GRAPHICS'
Product name from sender   = 'Q004.iges'
Destination product name   = 'Q004.iges'
```

*** Parameter Delimiters ***

```
Delimiter = ','
Terminator = ';'

```

*** Originating System Data ***

```
System ID          = 'ITDS CONVERTER: GEF_IGES'
Preprocessor version = '1.0'
Specification version = 6 (IGES 4.0)
```

*** Precision levels ***

```
Integer bits = 32
Floating point - Exponent = 38 Mantissa = 6
Double precision - Exponent = 308 Mantissa = 15
```

*** Global Model Data ***

```
Model scale          = 1.0000E+00
```

Unit flag = 1
Units = 'IN'
Line weights = 4
Maximum line thickness = 1.536842E-02
Minimum line thickness = 3.842105E-03
Granularity = 1.000000E-03
Maximum coordinate = 2.954101E+00

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	41
	Blanked	0
Independence:	Independent	39
	Physically Subordinate	0
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	39
	Annotation	2
	Definition	0
	Other	0
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	41
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	----	-----	-----	----
106	11	0	24	Copious data - Piecewise planar, linear string(2D path)
106	63	0	8	Simple closed planar curve
110	0	0	6	Line
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level Count
0 41

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 41

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
-	-	-	32	-	6	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

116	118	120	122	124	125	126	128	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

130	132	134	136	138	140	142	144	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	3	(0.0038)

3	10	(0.0115)
1	28	(0.0038)

*** Colors Used in Data ***

Defaulted	3
Red	8
Green	30

***** ENTITY ANALYSIS *****

*** Entity type: 106

*** Entity type: 110

-- 6 lines averaging 1.362447E-01 units --

*** Entity type: 404

Drawing at D 5 contains 1 views.

Drawing at D 5 contains 0 annotation entities.

*** Entity type: 406

*** Entity type: 410

Scale of view at D 1 is 1.000000E+00.

Orthographic View entity at D 1 has 0 clipping planes specified.

XMIN = Not Set	XMAX = Not Set
YMIN = Not Set	YMAX = Not Set
ZMIN = Not Set	ZMAX = Not Set

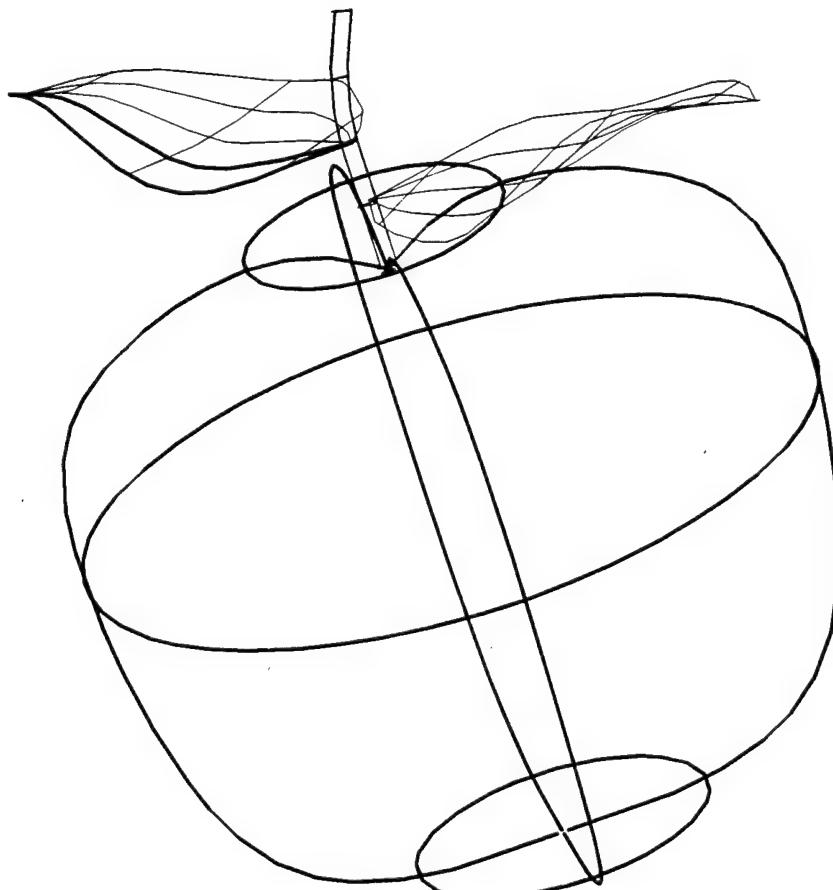
*** Message Summary ***

*** Error Summary ***

0 fatal errors
0 severe errors
0 errors
0 warnings
0 cautions
0 nitpicks
0 notes

*** End of Analysis of /novell/9354/q204.igs ***

10.1.2 Output IGESView



11. Appendix C - Detailed SGML Analysis

11.1 Document Set One

11.1.1 Parser Log

SGML Document Type Definition Parser
An SGML System Conforming to
International Standard ISO 8879
Standard Generalized Markup Language

Log file: '9354-1.LOG'
SDO File: 'ctndocl.sdo'
Namecase General is yes.
Namecase Entity is no.
Parsing DTD file: '9354-1.dtd'

<!ELEMENT	viewport	- o	EMPTY	>
<!ATTLIST	viewport			
	name	ID	#IMPLIED	
	viewstyleid	FSIDREF		

DTD0137: Incorrect token 'FSIDREF'.
Parser Ignoring Input Up To Next MDO.
In declaration: '<!ATTLIST'.
In declaration: '<!DOCTYPE'.
in line 93 in file '9354-1.dtd'

DTD0169: GRPCNT of 50 is greater than 48.
In declaration: '<!DOCTYPE'.
in line 104 in file '9354-1.dtd'

DTD0169: GRPCNT of 51 is greater than 48.
In declaration: '<!DOCTYPE'.
in line 104 in file '9354-1.dtd'

<<<<< PART OF LOG REMOVED HERE >>>>>

DTD0169: GRPCNT of 81 is greater than 48.
In declaration: '<!DOCTYPE'.
in line 104 in file '9354-1.dtd'

DTD does not conform to ISO 8379 standard due to these errors:
Reference quantity set error count: 32
Uncorrectable syntax error count: 1

.DTO file not created due to parsing errors.

Program status code: 5.

11.1.2 Exoterica XGMLNormalizer Parser

```
C:\XGML\XGMLNORM.EXE --
Error on line 32 in file i:\9354\d001g002:
Error in the SGML Declaration.
The last text seen was "13".
Attempt to use an undefined character for function RE.
```

```
C:\XGML\XGMLNORM.EXE --
Error on line 33 in file i:\9354\d001g002:
Error in the SGML Declaration.
The last text seen was "10".
Attempt to use an undefined character for function RS.
```

```
C:\XGML\XGMLNORM.EXE --
Error on line 34 in file i:\9354\d001g002:
Error in the SGML Declaration.
The last text seen was "32".
Attempt to use an undefined character for function SPACE.
```

```
C:\XGML\XGMLNORM.EXE --
Error on line 35 in file i:\9354\d001g002:
Error in the SGML Declaration.
The last text seen was "9".
Attempt to use an undefined character for added function TAB.
<!-- The SGML Declaration is in error. -->
```

11.1.3 Sema Mark-it Log

```
<!--*** file:\XVALID\9354-1.SGM line:93 pos:2858
Syntax error. Valid tokens at this point are: Ee s com pero CDATA ENTITY ENTITIES grpo
NUTOKEN NUTOKENS .-->
```

```
<!--*** file:\XVALID\9354-1.SGM line:94 pos:2900
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
mdoUSEMAP .-->
```

```
<!--*** file:\XVALID\9354-1.SGM line:94 pos:2916
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
```

mduUSEMAP .-->

<!--*** file:\XVALID\9354-1.SGM line:94 pos:2924
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
mduUSEMAP .-->

<!--*** file:\XVALID\9354-1.SGM line:95 pos:2958
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
mduUSEMAP .-->

<!--*** file:\XVALID\9354-1.SGM line:95 pos:2971
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
mduUSEMAP .-->

<!--*** file:\XVALID\9354-1.SGM line:96 pos:3052
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
mduUSEMAP .-->

<!--*** file:\XVALID\9354-1.SGM line:96 pos:3083
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
mduUSEMAP .-->

<!--*** file:\XVALID\9354-1.SGM line:96 pos:3093
Syntax error. Valid tokens at this point are: Ee s mdo_mdc mdo_com pio mdo_dso pero ms
mduUSEMAP .-->

<!--*** file:\XVALID\9354-1.SGM line:128 pos:4725
Dynamic memory allocation problem:
insufficient space to run Sema Mark-it. Check system configuration.-->

11.1.4 Public Domain sgmls Log

sgmls: SGML error at 9354-1.sgm, line 1 at "L":
SGML markup declaration not permitted here; declaration ended
sgmls: SGML error at 9354-1.sgm, line 1 at " ":
No DOCTYPE declaration; document type is unknown
sgmls: SGML error at 9354-1.sgm, line 57 at "E":
DOCTYPE markup declaration not permitted here; declaration ended
Element structure: *DOCTYPE
sgmls: SGML error at 9354-1.sgm, line 60 at "N":
NOTATION markup declaration not permitted here; declaration ended
Element structure: *DOCTYPE

<<<<< PART OF LOG REMOVED HERE >>>>>

sgmls: SGML error at 9354-1.sgm, line 132 at "b":
Possible attributes treated as data because none were defined
Element structure: *DOCTYPE

sgmls: SGML error at 9354-1.sgm, line 132 at " ":
Undefined DOC start-tag GI ignored; not used in DTD
Element structure: *DOCTYPE

sgmls: SGML error at 9354-1.sgm, line 134 at ">":
Undefined FRONT start-tag GI ignored; not used in DTD
Element structure: *DOCTYPE

sgmls: SGML error at 9354-1.sgm, line 134 at ">":
Undefined All start-tag GI ignored; not used in DTD
Element structure: *DOCTYPE

<<<<< PART OF LOG REMOVED HERE >>>>>

sgmls: SGML error at 9354-1.sgm, line 141 at ">":
No element declaration for DOC end-tag GI; end-tag ignored
Element structure: *DOCTYPE

TOTALCAP 32/200000
ELEMCAPI 32/200000

11.1.5 Validator V2.0 EXL Parser Log

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning** in "9354-1.sgm", line 30:
  A base character set in the concrete syntax part of an SGML Declaration is
  not used in the document character set part of the SGML Declaration.
  The public identifier of the base character set is "ANSI X3.4-1986//CHARSET
  American Standard Code for Information Interchange (ASCII)//ESC 2/8 4/2".
      Information Interchange (ASCII)//ESC 2/8 4/2"
      /\
-->
<!-- **Error** in "9354-1.sgm", line 32:
  The meaning of each significant base character must be assigned to one, and
  only one, syntax character in the SGML Declaration.
  The first unassigned or multiply assigned character is "0".
  FUNCTION    RE          13
  /\
-->
```

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

```
<!-- **Error** in "9354-1.sgm", line 32:
  A function character must not be assigned to a syntax reference character
  that is not mapped to a document character.
```

The function character is character number 13.

FUNCTION RE 13
^^

-->

<!-- **Error** in "9354-1.sgm", line 33:

A function character must not be assigned to a syntax reference character
that is not mapped to a document character.

The function character is character number 10.

RS 10
^^

-->

<!-- **Error** in "9354-1.sgm", line 34:

A function character must not be assigned to a syntax reference character
that is not mapped to a document character.

The function character is character number 32.

SPACE 32
^^

-->

<!-- **Error** in "9354-1.sgm", line 35:

A function character must not be assigned to a syntax reference character
that is not mapped to a document character.

The function character is character number 9.

TAB SEPCHAR 9
^

-->

<!-- **Error** in "9354-1.sgm", line 38:

A character in a parameter literal in the naming rules, general delimiter or
short reference delimiter parameter of the SGML Declaration must be assigned
to a unique character in the document character set.

The unassigned or multiply assigned character is "-".

LCNMCHAR "-."
^^

-->

<!-- **Error** in "9354-1.sgm", line 39:

A character in a parameter literal in the naming rules, general delimiter or
short reference delimiter parameter of the SGML Declaration must be assigned
to a unique character in the document character set.

The unassigned or multiply assigned character is "-".

UCNMCHAR "-."
^^

-->

<!-- **Error** in "9354-1.sgm", line 43:

A reference short reference delimiter, used because SHORTREF SGMLREF is
specified in the SGML Declaration, must not contain one or more that are not
mapped to unique document characters.

The short reference delimiter is " ".

SHORTREF SGMLREF

```

/\
-->
<!-- **Error** in "9354-1.sgm", line 43:
  A reference short reference delimiter, used because SHORTREF SGMLREF is
  specified in the SGML Declaration, must not contain one or more that are not
  mapped to unique document characters.
  The short reference delimiter is "".
      SHORTREF  SGMLREF
      /\
-->

      <<<<< PART OF LOG FILE REMOVED HERE >>>>>

<!-- **Error** in "9354-1.sgm", line 43:
  A reference short reference delimiter, used because SHORTREF SGMLREF is
  specified in the SGML Declaration, must not contain one or more that are not
  mapped to unique document characters.
  The short reference delimiter is "}".
      SHORTREF  SGMLREF
      /\
-->

<!-- **Error** in "9354-1.sgm", line 43:
  A reference short reference delimiter, used because SHORTREF SGMLREF is
  specified in the SGML Declaration, must not contain one or more that are not
  mapped to unique document characters.
  The short reference delimiter is "~".
      SHORTREF  SGMLREF
      /\
-->

<!-- **Error** in "9354-1.sgm", line 93:
  Recognized a delimiter or data not allowed in the current context.
  The unrecognized text is "FSIDREF".
      viewstyleid  FSIDREF #IMPLIED
      ~~~~~~
-->

<!-- **Error** in "9354-1.sgm", line 132:
  A name specified in a start tag must be declared as an element in the DTD.
  The name is "a8".
  The open elements are "DOC", "FRONT", and "A81".
  The following elements can end: "A81" or "FRONT".
  The following elements can start: "A11", "A12", "A21", "A22", "A23", "A24",
  "A25", "A26", "A27", "A28", "A31", "A32", "A33", "A34", "A35", "A41", "A42",
  "A43", "A44", "A45", "A51", "A52", "A53", "A54", "A55", "A61", "A71", "A72",
  "A73", "A81", "A82", "A82A", "A82AA", "A82B", "A82BB", "A83", "A84", "A91",
  "A91A", "A92", "A93", "A94", "A95", "A96", "A97", "A98", "A99", "AA1",
  "AA2", "AA3", "AA4", "AA5", "AA6", "AA7", "AA8", "AA9", "AAA", "AAB", "AB1",
  "AB1A", "AB2", "AB3", "AB4", "AB5", "AB6", "AC1", "AC2", "AC3", "AC4",
```

```
"AC5", "AC6", "AC7", "AC8", "AC9", "AD1", "AD2", "AD3", "AE1", "AF1", "AF2",
"AF3", "BODY", or "VIEWDEF".
Text is allowed.
1<a42><a43><a44><a45><a51><a52><a53><a54><a55><a61><a71><a72><a73><a81><a8
^
-->
<!-- **Error** in "9354-1.sgm", line 133:
A name specified in a start tag must be declared as an element in the DTD.
The name is "a".
The open elements are "DOC", "FRONT", and "AA1".
The following elements can end: "AA1" or "FRONT".
The following elements can start: "A11", "A12", "A21", "A22", "A23", "A24",
"A25", "A26", "A27", "A28", "A31", "A32", "A33", "A34", "A35", "A41", "A42",
"A43", "A44", "A45", "A51", "A52", "A53", "A54", "A55", "A61", "A71", "A72",
"A73", "A81", "A82", "A82A", "A82AA", "A82B", "A82BB", "A83", "A84", "A91",
"A91A", "A92", "A93", "A94", "A95", "A96", "A97", "A98", "A99", "AA1",
"AA2", "AA3", "AA4", "AA5", "AA6", "AA7", "AA8", "AA9", "AAA", "AAB", "AB1",
"AB1A", "AB2", "AB3", "AB4", "AB5", "AB6", "AC1", "AC2", "AC3", "AC4",
"AC5", "AC6", "AC7", "AC8", "AC9", "AD1", "AD2", "AD3", "AE1", "AF1", "AF2",
"AF3", "BODY", or "VIEWDEF".
Text is allowed.
<a82bb><a83><a84><a91><a91a><a92><a93><a94><a95><a96><a97><a98><a99><aal><a
^
-->
<!-- 96 errors and 0 warning reported. -->
```

11.2 Document Set Two

11.2.1 Parser Log

SGML Document Type Definition Parser
An SGML System Conforming to
International Standard ISO 8879
Standard Generalized Markup Language

Log file: '9354-2.LOG'
SDO File: 'ctndocl.sdo'
Namecase General is yes.
Namecase Entity is no.
Parsing DTD file: '9354-2.dtd'

This DTD conforms to the ISO 8879 standard

DTO file '9354-2.DTO' created

closing statistics:
Capacity points: 27264
Bytes of DTO file string space: 7837
SGML descriptor blocks: 2980

Document Type Definition is compliant and parsed normally.

Program status code: 0.

11.2.2 Validator V2.0 EXL Parser Log

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning**:
  An element with mixed content should permit data characters ("PCDATA")
  everywhere.
  The element being declared is "ENTRY".
  (((#PCDATA|xref|change|emphasis|hcp|hci|ocp|
    ^^^^^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("PCDATA")
  everywhere.
  The element being declared is "NOTICE".
  (((#PCDATA|xref|change|emphasis|hcp|hci|ocp|
```

```

      ^^^^^^
-->
<!-- **Warning** in "9354-2.sgm", line 428:
  An element with mixed content should permit data characters ("#PCDATA")
  everywhere.
  The element being declared is "RESULT".
  <!ELEMENT result      - o (%text;,faultcode?)>
                                     /\
-->
<!-- **Warning** in "9354-2.sgm", line 628:
  There is no element with an IDREF or IDREFS attribute value equal to a
  specified ID value.
  The unreferenced ID attribute value is "X0".
-->
<!-- 4 warnings reported. -->
```

12. Appendix D - Detailed Raster Analysis

12.1 File D002R003

12.1.1 Output HiJaak for Windows

| U.S. ARMY MATERIEL COMMAND
U.S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA | | | | PARTS
LIST | | | | PL 10677287
CODE IDENTIFICATION NO.
18876 | | | |
|--|-------------------------------|---------------------------------|--------------|------------------|-------|------|-------------|---|------|---------------------|------|
| TITLE OSCILLATOR, VOLTAGE CONTROLLED-COHO-A3A13 | | | | USAMC/COM
ECP | 63343 | DATE | 16 NOV 70 | REV | - | SHEET | 3 OF |
| PART
NO. | PART OR
IDENTIFICATION NO. | DRAWING OR
SPECIFICATION NO. | NOMENCLATURE | QUANTITY | PL | MI | EFFECTIVITY | | ZONE | NOTES OR
REMARKS | |
| | | | | | | | FROM | TO | | | |
| | 10181751-227 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-208 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-209 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-210 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-211 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-212 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-213 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-214 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-215 | 10181751 | RESISTOR | | | | | | | | |
| 2 | 10181752-261 | 10181752 | RESISTOR | 1 | | | | | | | |
| 3 | 10181752-357 | 10181752 | RESISTOR | 1 | | | | | | | |
| 4 | 10181751-147 | 10181751 | RESISTOR | 2 | | | | | | | |
| 5 | 10180306-239 | 10180306 | RESISTOR | 2 | | | | | | | |
| 6 | 10181751-133 | 10181751 | RESISTOR | 1 | | | | | | | |
| 7 | 10181751-166 | 10181751 | RESISTOR | 1 | | | | | | | |
| 8 | 10180328-418 | 10180328 | RESISTOR | 1 | | | | | | | |
| 9 | 10181752-285 | 10181752 | RESISTOR | 1 | | | | | | | |
| 10 | 10181752-298 | 10181752 | RESISTOR | 1 | | | | | | | |
| 11 | 10181752-306 | 10181752 | RESISTOR | 1 | | | | | | | |
| 12 | 10181752-297 | 10181752 | RESISTOR | 1 | | | | | | | |
| 13 | 10181752-289 | 10181752 | RESISTOR | 1 | | | | | | | |
| 14 | 10181752-271 | 10181752 | RESISTOR | 1 | | | | | | | |
| 15 | 10181752-310 | 10181752 | RESISTOR | 1 | | | | | | | |
| 16 | 10181751-55 | 10181751 | RESISTOR | 1 | | | | | | | |
| | 10181751-1 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-2 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-3 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-4 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-5 | 10181751 | RESISTOR | | | | | | | | |
| | 10181751-6 | 10181751 | RESISTOR | | | | | | | | |

13. Appendix E - Detailed CGM Analysis

13.1 File D002C002

13.1.1 Parser Log

CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 06/01/93 Time: 15:53:40

Metafile Examined : i:\9354\c202.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

===== Trace Report =====

Tracing not selected.

===== CGM Conformance Violation Report =====

No Errors Detected

===== CALS CGM Profile (MIL-D-28003) Report =====

No profile discrepancies detected.

===== Conformance Summary Report =====

CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 06/01/93 Time: 15:53:43

Name of CGM under test: i:\9354\c202.cgm

Encoding : Binary

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

BEGIN METAFILE string : "C002.cgm"

METAFILE DESCRIPTION : "NORTHROP B2 ITDS GEF, MIL-D-28003/BASIC-1"

Picture 1 starts at octet offset 200; string contains: "Picture 1"

Conformance Summary : This file conforms to the CGM specification.
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested
272 Elements Tested
3978 Octets Tested

```
=====
|   No Errors Were Detected   |
=====
```

===== End of Conformance Report =====

13.1.2 validcgm Log

Analysis for file c202.cgm using table table
ERROR: illegal in this state (2), std B
ERROR: required precursor (0, 4) not yet seen
(14.1, 0) (3, 6, 2) Clip Indicator OFF
MILSPEC 28003 error: illegal hatch index
(173, 2352) (5, 24, 2) Hatch Index 6
(0, 1) occurred 1 time
(0, 2) occurred 1 time
(0, 3) occurred 1 time
(0, 4) occurred 1 time
(0, 5) occurred 1 time
(1, 1) occurred 1 time
(1, 2) occurred 1 time
(1, 3) occurred 1 time
(1, 4) occurred 1 time
(1, 5) occurred 1 time
(1, 6) occurred 1 time
(1, 7) occurred 1 time
(1, 8) occurred 1 time
(1, 9) occurred 1 time
(1, 10) occurred 1 time
(1, 11) occurred 1 time
(1, 12) occurred 1 time
(1, 13) occurred 1 time
(2, 2) occurred 1 time
(2, 6) occurred 1 time

(2, 7) occurred 1 time
(3, 2) occurred 1 time
(3, 6) occurred 1 time
(3, 6) occurred illegally 1 time
(4, 1) occurred 32 times
(4, 3) occurred 5 times
(4, 4) occurred 50 times
(4, 7) occurred 3 times
(4, 9) occurred 1 time
(4, 12) occurred 2 times
(4, 15) occurred 3 times
(4, 16) occurred 2 times
(4, 17) occurred 2 times
(4, 18) occurred 2 times
(4, 19) occurred 1 time
(5, 2) occurred 17 times
(5, 3) occurred 17 times
(5, 4) occurred 17 times
(5, 6) occurred 5 times
(5, 7) occurred 5 times
(5, 8) occurred 5 times
(5, 10) occurred 3 times
(5, 12) occurred 5 times
(5, 13) occurred 1 time
(5, 14) occurred 7 times
(5, 15) occurred 5 times
(5, 16) occurred 7 times
(5, 17) occurred 4 times
(5, 18) occurred 1 time
(5, 22) occurred 10 times
(5, 23) occurred 8 times
(5, 24) occurred 7 times
(5, 27) occurred 2 times
(5, 28) occurred 2 times
(5, 29) occurred 2 times
(5, 30) occurred 10 times
(5, 31) occurred 7 times
(5, 34) occurred 1 time

13.1.3 Output Harvard Graphics

